Pan-Asian Resuscitation Outcomes Study (PAROS)  
At  
GVK Emergency Management and Research Institute (EMRI)  

City: Secunderabad, State: Telangana, Country: India.
Background: Out of hospital cardiac arrest (OHCA) is a global health concern. Survival rates in Asia are low compared to USA or Europe.

Design: This is an international, multi-centre cohort study of out-of-hospital cardiac arrest across the Asia-Pacific.

Objectives: We aim to identify the relative importance/effect of major systemic, modifiable factors for OHCA survival in the Asia Pacific. The large sample size and international nature of the study provides a unique opportunity for analysis of preventable risk factors for OHCA and systemic predictors of survival. Identifying the relative incremental cost effectiveness of modifiable factors for OHCA survival will allow prioritization and selection of 5 pre-identified competing (although not exclusive) interventional strategies (namely: increasing bystander cardio-pulmonary resuscitation, public access defibrillation, decreasing emergency medical services [EMS] response times, developing advanced EMS life support, specialized Cardiac Arrest Centre's).

Methods: Data will be collected from emergency dispatch records, ambulance patient case notes, emergency department and in-hospital records. All completed data will then be collected and sent to the Study Co-ordination Centre (Singapore) for data management using electronic data capture (EDC). Our required sample size for the study is 13,447 OHCA patients over 2 years. The relative effectiveness of the interventions associated with each of the 5 strategies will be determined. A cost analysis for the various strategies will be conducted to determine the incremental cost-effectiveness for each strategy.

Eligibility: All OHCA patients presenting to EMS or Emergency Departments during the study period as confirmed by the absence of pulse, unresponsiveness and apnea will be eligible.
**INCLUSION CRITERIA**
All OHCA conveyed by EMS (or presented at Emergency Departments) during the study period as confirmed by the absence of pulse, unresponsiveness and apnea.

**EXCLUSION CRITERIA**
Patients who are immediately pronounced dead, and for whom resuscitation is not attempted, including decapitation, rigor mortis and dependent lividity.

**OUTCOMES**
Primary outcome: Survival to hospital discharge (or survival to 30 days post) cardiac arrest.

Secondary outcomes: Return of spontaneous circulation, Survival to hospital admission. (Neurological status on hospital discharge or on 30th day post cardiac arrest, if not discharged and Quality of life assessment for survivors).

**VARIABLES MEASURED**
Definitions will follow Utstein recommendations61 as well as conform to a unified taxonomy established by the PAROS network. Data will be collected from EMS dispatch, ambulance records (and hospital records).

**DATA COLLECTION**
EMS data will be collected from both from EMS dispatch records, as well as ambulance patient case notes. EMS timings will be automatically recorded by the central dispatch system (computerized system timings where available).
Updates made in ePAROS Online Application of GVK EMRI Login:

1. Login IDs created- 1. GVK EMRI and 2. aruna_g@emri.in.
2. City-Hyderabad (HYD) changed to State-Telangana (TLG).
3. Destination Hospital Type- Government, Private and Trust Hospitals.
5. Site Number-001-Government. and 02 –Private Hospital Admissions.
6. Total records entered = 499 (as on dated 20th July 2016)
7. Demo/Trail records = 6
8. Inclusion records = 493
9. Months and Year of Inclusion data entry:
   December, 2015 and January, February, March, April, 2016
10. 5 Months -December 2015 to April 2016 sample (493) presented in PPT.
**GVK EMRI-EMS- Inclusion Sample**
**Overview and Month wise distribution**

<table>
<thead>
<tr>
<th>Description of ePAROS Variables</th>
<th>GVK EMRI-EMS Data</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Initial Information</strong></td>
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<tr>
<td>Case Number</td>
<td>Incident ID</td>
<td>493</td>
</tr>
<tr>
<td>Country</td>
<td>India (IN)</td>
<td>493</td>
</tr>
<tr>
<td>City/State</td>
<td>Hyderabad (HYD)</td>
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<tr>
<td></td>
<td>Telangana (TLG)</td>
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<tr>
<td>Site No.</td>
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<td></td>
<td>02-Private Hospital</td>
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<tr>
<td><strong>Mode of Transportation</strong></td>
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<tr>
<td>Patient brought by</td>
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<tr>
<td><strong>Incident Information</strong></td>
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<td></td>
</tr>
<tr>
<td>Location of Incident / (Zip/Postal code)</td>
<td>Unknown</td>
<td>493</td>
</tr>
</tbody>
</table>

**Month wise distribution**

- **December, 2015**: 20% (99)
- **January, 2016**: 20% (98)
- **February, 2016**: 23% (115)
- **March, 2016**: 21% (104)
- **April, 2016**: 16% (77)

N=493
Incident Information - Location Type

Location Type (N=493)

- Home Residence: 264
- Street/Highway: 129
- Healthcare Facility: 50
- Public/Commercial Building: 41
- Industrial Place: 5
- Nursing Home: 1
- Other (Inside Bus): 1
- Place of Recreation: 1

Location Type - Health Care Facility (n=50)

- Community Health Centre: 16
- Primary Health Centre: 15
- Government Area Hospital: 8
- Private Hospital: 5
- District Government Hospital: 4
- Private Nursing Home: 2
### Patient Information-Age Group and Gender

<table>
<thead>
<tr>
<th>Description of ePAROS Variables</th>
<th>GVK EMRI-EMS Data</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Birth</td>
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<tr>
<td>Race</td>
<td>Indian</td>
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</tbody>
</table>

#### Age Group distribution (N=493)

- Days (0,1,5,7): 20
- Months (2,4,5,9): 7
- 1-10 Years: 12
- 11-19 Years: 18
- 20-29 Years: 41
- 30-39 Years: 45
- 40-49 Years: 75
- 50-59 Years: 81
- 60-69 Years: 108
- 70-79 Years: 55
- 80-89 Years: 27
- 90+ Years: 4
Patient Information - Age Group and Gender

Age Modifier (N=493)
- 95% (466) years
- 4% (20) months
- 1% (7) days

Gender (N=493)
- 69% (339) male
- 31% (154) female
Patient Information-Medical History

Medical History (N=493)

- Unknown: 15% (75)
- Yes: 22% (106)
- No: 63% (312)

Medical History-Yes (n=106)

- Heart disease: 40
- Respiratory Disease: 37
- Diabetes: 23
- Hypertension: 23
- Other: 13
- Stroke: 7
- Cancer: 4

Note: Multiple options applied for medical history (sum count n=147).
Other Medical History

Medical History-Other (n=13)

- Fits/Seizures/Convulsions: 10
- Sun Stroke: 1
- Throat Infection: 1
- Fall from Height: 1
Prehospital Event and Resuscitation Information

Arrest Witness & Other Details

Arrest Witnessed (N=493)

- Witnessed 26% (126)
- Not witnessed 74% (367)

Arrest witnessed-Yes (n=126)

- EMS/Private ambulance: 122
- Bystander-Healthcare provider: 2
- Bystander-Family: 1
- Bystander-Lay Person: 1
Pre-hospital - Drug administration and CPR and ROSC at scene/en-route

Pre-hospital drug administration (N=493)

- Yes: 8% (41)
- No: 92% (452)

Note: Multiple options applied for prehospital drug administration (sum count n=66).

Prehospital drug administration-Yes (n=41)

- Epinephrine: 19
- Atropine: 29
- Others: 18
Disposition - Final status and Cause of Arrest at scene (or) en-route

**Final status at scene/en-route (N=493)**
- Conveyed to ED: 26% (126)
- Pronounced dead at scene: 74% (367)

**Cause of arrest at scene/en-route (n=367)**
- Non-Trauma: 89% (327)
- Trauma: 11% (40)
Causes contd...

**Cause of arrest at scene/en-route**

**Non-Trauma (n=327)**

- **Other**: 209
- **Presumed Cardiac Etiology**: 55
- **Respiratory**: 44
- **Electrocution**: 14
- **Drowning**: 5

![Bar chart showing causes of arrest at scene/en-route for non-trauma cases](image-url)
Disposition-Level and Destination Hospital Type

Level of destination hospital (n=126)

- Tertiary: 75% (94)
- Community: 25% (32)

Destination Hospital-Type (n=126)

- 0001 - Government Hospital: 105
- 0002 - Private Hospital: 21
Disposition - At ED arrival and Cause of arrest at ED

<table>
<thead>
<tr>
<th>Description of ePAROS Variable</th>
<th>Count</th>
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<tbody>
<tr>
<td>Patient's status at ED arrival (n=126)</td>
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<tr>
<td>Ongoing resuscitation</td>
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</tr>
<tr>
<td>ROSC</td>
<td>7</td>
</tr>
</tbody>
</table>

Cause of arrest at ED (n=126)

- Trauma: 29% (36)
- Non-Trauma: 71% (90)

Cause of arrest at ED - Non-Trauma - Yes (n=90)

- Other: 48
- Respiratory: 31
- Presumed Cardiac Etiology: 9
- Electrocution: 1
- Drowning: 1
### Disposition - Final status at ED

<table>
<thead>
<tr>
<th>Description of the Variable</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td><strong>Reason for discontinuing CPR at ED (n=126)</strong></td>
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<tr>
<td>Death</td>
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<tr>
<td>ROSC at Scene</td>
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<tr>
<td><strong>Return of spontaneous circulation at ED (n=126)</strong></td>
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<tr>
<td>No</td>
<td>119</td>
</tr>
<tr>
<td>Not Applicable</td>
<td>7</td>
</tr>
<tr>
<td><strong>Cardiac rhythm on arrival at ED (n=126)</strong></td>
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<tr>
<td>Asystole</td>
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<tr>
<td>Sinus or other perfusing rhythm</td>
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<tr>
<td><strong>Patient status on arrival at ED (n=7)</strong></td>
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<tr>
<td>Pulse</td>
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<tr>
<td>Breathing</td>
<td>7</td>
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<tr>
<td><strong>Outcome of patient (n=126)</strong></td>
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<tr>
<td>Admitted</td>
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<tr>
<td>Died in ED</td>
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<tr>
<td><strong>Patient status (Admitted-n=7)</strong></td>
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<tr>
<td>Discharged Alive</td>
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<tr>
<td>Died in the hospital (7 days)</td>
<td>3</td>
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<tr>
<td>Status Unknown (No answer)</td>
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</tr>
</tbody>
</table>
Thank You